State of Utah
Natural Resource Damage Trustee
Ensign-Bickford (Trojan Plant) Groundwater Cleanup

Request for Public Comment

August 2004

Two proposed agreements, totaling approximately $12 million, have been negotiated by the State of Utah and The Ensign-Bickford Company (EBCo) to conduct clean up and to settle the State's claim for damages to groundwater resulting from activities at the Trojan facility in Spanish Fork, Utah.

The agreements include a $9.375 million fund for pumping and treating the groundwater and a $2.58 million Trust Fund for natural resource damage. The purpose is to "restore, replace, or acquire the equivalent" of the injured groundwater for the benefit of the public in the impacted area, outlined on the enclosed map. In addition, EBCo and certain prior owners have spent over $15 million to date to investigate and clean up site-related conditions.

Federal and state laws give the Utah Department of Environmental Quality (DEQ) Executive Director, as Trustee, the authority to file a claim when a natural resource of the State is damaged. In this case, the injury occurred as a result of release of contaminants to groundwater from historic waste disposal practices and past operations.

The agreements are now before the public for its consideration. A 45-day public comment period has been set, beginning August 11 and continuing through September 24, 2004. At the conclusion of this comment period, the agreements will either be finalized as presented or modified, based on public feedback.

This fact sheet summarizes the provisions of the agreements. The agreements and other related documents are available for review at the Mapleton City Offices, 35 East Maple Street, and online at www.deq.utah.gov/issues/EBCo

Overview

Explosives were manufactured at the site, and some of the contaminants seen in the groundwater are unique to this type of operation. It is not certain when the groundwater contamination began, but it most likely occurred over the operational history of the Trojan plant. A major change occurred when the State approved a plan to pre-treat wastewater discharged from the plant, reducing the release of contaminants. EBCo now pre-treats its wastewater prior to its discharge to the Spanish Fork Publicly Owned Treatment Works (wastewater treatment plant).

Ongoing studies indicate that the EBCo facility's current impact to the groundwater is minimal in comparison to historical discharges. No wastewater is currently being disposed of on the plant property.

The impact to groundwater exists within an area that begins at the northern end of the Trojan site and extends to Mapleton City Well No. 1, west to State Route 147, and east to the Wasatch Fault. The contaminants have entered the regional unconsolidated aquifer. The damage to the natural resource is largely in the deep regional aquifer, the primary source of public drinking water.

The Agreements

Two agreements outline the settlement provisions.

The ***Addendum Agreement*** includes a financial assurance trust of $9.375 million to implement the Corrective Action Plan for an estimated 20 years. Costs will include operation and maintenance of the three water treatment systems, ongoing monitoring of contaminant concentrations in the area, and ongoing analysis of the treated water to ensure efficiency of the treatment systems.

Under the ***Consent Agreement***, EBCo will pay the State Natural Resource Damage Trustee (the DEQ Executive Director) $2.58 million in cash for natural resource damages. This money will be placed in a Trust Fund to be used only to "restore, replace, or acquire the equivalent of the groundwater resources for the benefit of the public" as provided under federal law. Simply, this means that the money can only be used for projects which replace the water that would have been available had the groundwater not been contaminated.

EBCo and any purveyor of municipal water can, within the first three years after the agreement is signed, propose a joint project to provide water to the public. With the Trustee's approval, they can access the $2.58 million trust to implement the project. The money can also be accessed if the Trustee determines there is a direct and immediate threat to public health or the environment that requires State action.

After the three-year period, the Trustee or another entity approved by the Trustee may propose a project for use of the Funds as conditioned under federal law. Interest earned on the monies will remain in and be used as part of the Trust Fund.

Under any proposal, EBCo cannot receive or beneficially use any of the water resources provided to the public unless those resources are purchased at market rates.

Important to Note: The agreements are between the State and EBCo, and the settlement deals strictly with loss of the water for public use. The agreements do not settle the claims of an individual or entity that is not directly a party to the agreements. Those individuals and entities retain their rights to deal directly with EBCo to settle any claims.

Also, the State Engineer will allocate the right to use the surface or groundwater resources by the public, pursuant to Utah water law.

The Corrective Action Plan

The agreements reference the Corrective Action Plan (CAP).

EBCo consultants measured the magnitude and extent of the area of contamination, with DEQ oversight. DEQ approved all sampling plans and took "split" samples, which were evaluated by a separate lab to ensure accurate results. From this information, EBCo submitted a CAP in 2002. The CAP details how the contaminants are to be removed from the groundwater. Federal and state standards must be met, and a useable source of drinking water must be provided to the public. The CAP also expands on the interim measures that have been taken, since 1998, to address the problem.

Institutional controls have been implemented to help protect the public from improper use of contaminated groundwater. Mapleton requires existing residences located within the impacted zone and all new housing construction within the city to be connected to the municipal water system.

The Pump-and-Treat Process

Five extraction wells currently pull water from the area. These wells are located as follows:

- Mapleton No. 1 Well - next to Mapleton City Hall;
- Orton-23 Well - approximately 750 East and 1600 South in Mapleton;
- Recovery Well R1 - northeast corner of the EBCo site;
- Recovery Well R2 - east of the PacifiCorp electric substation in Spanish Fork; and
- Recovery Well R3 - on the Joyner property in south Mapleton.

The Utah Division of Water Rights determined the Safe Annual Yield – the amount of water that could be extracted from the aquifer without mining or affecting down gradient water rights in the aquifer – to be 4,100 acre-feet per year. EBCo was required to obtain water rights for the impacted area before treatment could begin.

Extracted water can be sent to one of three treatment plants built to provide drinking-quality water to Mapleton and Spanish Fork cities for use as these communities see fit. At each treatment plant, water flows through Granular Activated Carbon columns, which remove the contaminants. Frequent sampling and analysis assures that the contaminants in the water meet cleanup standards (including non-detection of some contaminants) and that the water meets drinking water standards.

This pump-and-treat system will operate until the groundwater meets corrective action standards, an estimated 20 years. Progress is reviewed annually, and if necessary, additional wells can be placed on line and old ones removed.

Treated water from the North Section now goes to Mapleton City's secondary irrigation system. Any water not used is discharged to Hobble Creek. Treated water from the South Section goes to Spanish Fork's secondary irrigation system. Any water not used is discharged to the Spanish Fork River.

Get Involved

Public comment is a key step in this process. Take the opportunity to ask questions and let us know what you think.

REVIEW OF DOCUMENTS – Copies of the proposed agreements, the Corrective Action Plan, and related documents are available online at http://www.deq.utah.gov/issues/EBCo

Hard copies are available for review during regular business hours, Monday through Friday, at:

Mapleton City Offices
35 East Maple Street
Contact: Debbie Walser, 801-489-5657

Utah Division of Water Quality
288 North 1460 West, Salt Lake City
Contact: Keith Eagan, 801-538-6017

PUBLIC REVIEW AND COMMENT – You are invited to review and make comments on the proposed agreements and other related documents during a 45-day public comment period, which runs from August 11 to September 24, 2004.

Public comments can be provided to the Trustee via e-mail at nrdtrustee@utah.gov, by fax at 801-536-0061, or by mail:

Utah Department of Environmental Quality, NRD Trustee
PO Box 144810
Salt Lake City, UT 84114-4810

Comments must be transmitted or postmarked on or before September 24, 2004.

OPEN HOUSE – Public comment will also be taken during an Open House to be held:

Thursday, September 2
Drop by anytime between 4 and 8 p.m.
Memorial Building
80 East Maple Street, Mapleton

You are welcome to come by and make an official comment for the record. A court reporter will be present. Also, representatives from the Department of Environmental Quality, the Attorney General's Office, the Department of Health, and The Ensign-Bickford Company will be available to provide information about the project and to answer questions about the agreements, Corrective Action Plan, and Natural Resource Damage Claim.

CONTACTS – If you'd like more information, contact any one of us:

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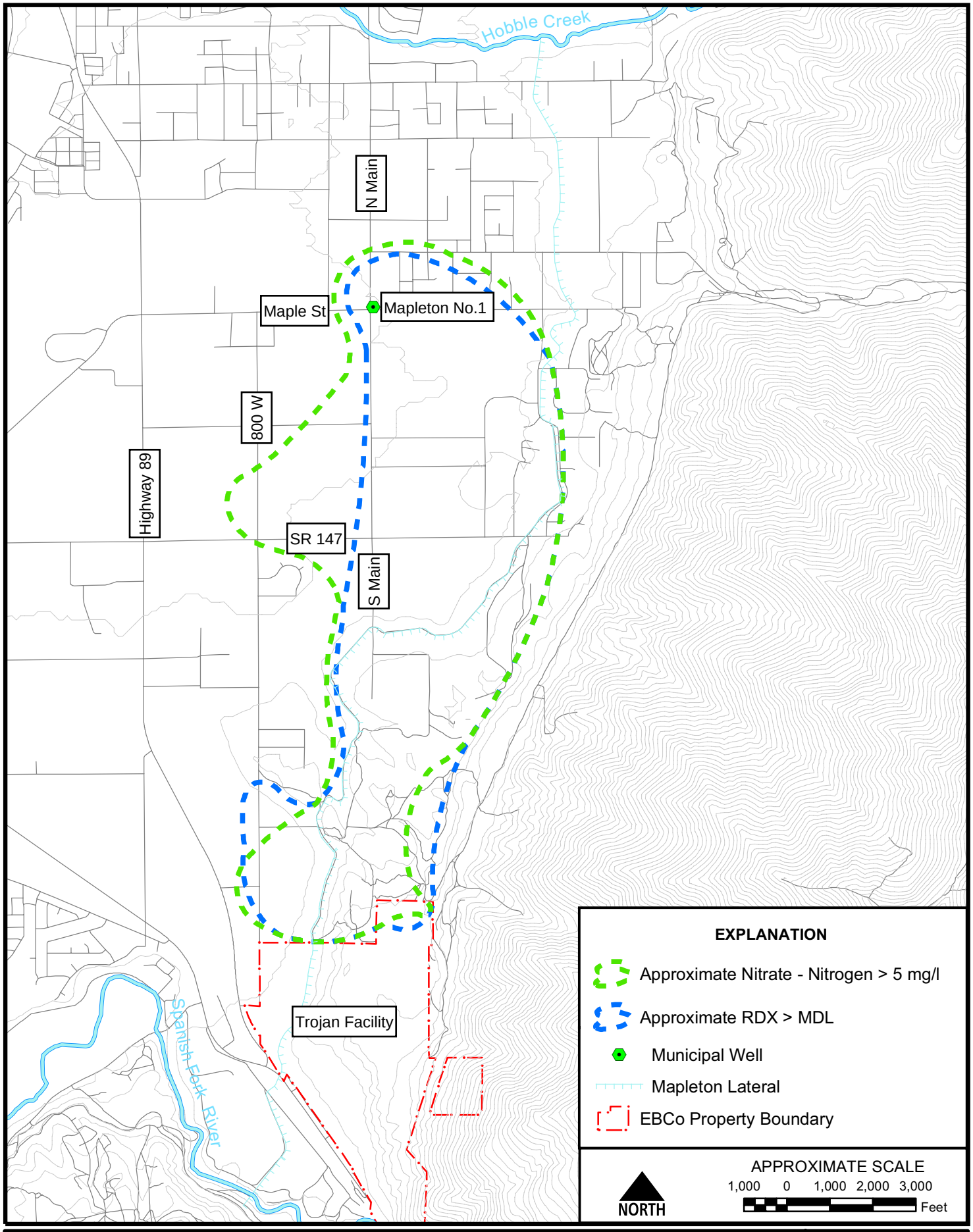

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Salt Lake City, Utah 84124
Tel: (801) 277-6150 Fax: (801) 277-6151

NITRATE - NITROGEN AND RDX APPROXIMATE DISTRIBUTION MAP 2003

Answers To Frequently Asked Questions

Is groundwater still receiving new sources of contaminants from the EBCo facility?

Ongoing site investigations by EBCo with oversight from the Utah Division of Solid and Hazardous Waste, have identified several possible sources, which are referred to as Solid Waste Management Units. These sources are being studied, and interim measures are underway to clean up areas that were determined to be a problem. Prior to issuing an Order for on-site cleanup, the Division of Solid and Hazardous Waste will provide a public comment process for EBCo's submittal. No potential sources have been identified other than the Solid Waste Management Units and the perched groundwater in the northeast corner of the site that would contribute to the current groundwater problem.

Has an attempt been made to model the groundwater?

Yes, but the initial modeling effort failed to provide a realistic representation of what is being observed in the field. A Mod-Flow model simulation was attempted and was reviewed by the Utah Geological Survey but has since been abandoned. Given the complexity of the geology and hydrogeology, a conceptual model has been used as opposed to a computer model. The conceptual model appears to be accurate, and is supported by observations and analytical data from monitoring wells.

Without a computer model, how do you know the location of the contamination?

A network of monitoring wells is sampled quarterly or semi-annually to determine where the contamination is and how it is interacting with the natural groundwater system. Monitoring wells have been placed in locations where, at present, they do not indicate the presence of contamination. A yearly analysis of the pump and treat system will take into consideration any detected impacts from these currently unaffected wells. Capture zones, or areas where water is drawn down as a result of pumping, have been identified. Based on the capture zones of the Mapleton No. 1 Well, the Orton-23 Well, and recovery well R1, the Division of Water Quality believes these unaffected wells have a low risk of being impacted.

How do you know that the impacted area is not growing in size or moving farther away?

Water quality data have been obtained from the monitoring well network over the last number of years. Based on these data, the impacted area has not changed much since the earliest years of monitoring. The aerial extent of the impacted area has basically remained the same size as when the area was first described. The concentrations of contaminants have, generally over the same time, been reducing. Farther northward migration does not appear to be happening, nor is westward migration occurring. Monitoring data also show that concentrations in the impacted area are not increasing but rather decreasing in most areas, which support the conceptual model.

How were the locations of the pumping wells determined?

The Mapleton No. 1 Well is in a good location to capture groundwater that may have the potential to migrate farther north, and it also acts as a buffer to other city wells that are to the north. The Orton-23 Well is located near the center of the highest contaminant concentrations, which makes it a logical pumping well. The southern recovery wells (R1, R2, and R3) were placed in locations where they will do the most good for that portion of the impacted area. Private land ownership and associated access restrictions have been a complicating factor in determining well locations.

How do you know that the treated water is safe to use?

Laboratories that are approved by the Utah Bureau of Laboratory Improvement are exclusively used for primary and secondary oversight analyses of groundwater samples. To date, no water being provided by the treatment systems has exceeded drinking water standards or has ever had any laboratory detection of RDX and HMX in the impacted area.

Why does the State allow 'some' contamination to remain when none was originally in the aquifer before it was contaminated?

The short answer is that cleanup levels are set both by looking at what scientists know about a contaminant and what risk-based studies tell us would protect public health. These cleanup levels are set by the Environmental Protection Agency.

Two things were considered in setting the cleanup goals in the CAP:

1. Maximum Contaminant Levels (MCL) - Health-based standards established through scientific studies and mandated by EPA; or

2. Lifetime Health Advisories - Levels suggested when there is not an established MCL for a contaminant. These are determined by scientific and risk-based health studies and, if followed, are considered acceptable drinking water levels by EPA.

In the case of RDX and HMX, which do not naturally occur in groundwater, the Lifetime Health Advisories were used.

What about breakdown products?

A study was conducted in the late 1990s on the theoretical breakdown products of RDX. None was detected. Nevertheless, the current treatment facilities have the ability to remove breakdown products, and the providers of the Granular Activated Carbon treatment system have confirmed this.

Can I use my private well for drinking water purposes?

The State does not regulate the use of private wells for drinking water quality. However, the Division of Drinking Water does not recommend using any well as a source of drinking water without first adequately testing that well to see if it is a safe source of drinking water.

Can I use my private well for any other purpose like stock watering or irrigation?

DEQ does not regulate the use of private wells for stock watering or irrigation. Information has been provided that suggests a risk is involved with using untreated well water that has been impacted. Toxicological review has determined that its use is within acceptable risk at RDX concentrations below 40 micrograms per liter (roughly equivalent to 40 parts per billion) for stock watering. Based on information currently available, the use of contaminated groundwater for stock watering and land application appears acceptable from a risk analysis standpoint. However, the individual landowner must decide if the risk is personally acceptable.

If my well is located in the Impacted Area, what water sample analyses should I have done if I choose to have them done?

You should analyze for all 12 contaminants of concern that are listed in the Corrective Action Plan, including nitrate. The best analytical method is EPA Method 8330, which tests for the contaminants. Nitrate sampling can be done by the Utah County Health Department.